

MULTIMODAL & PUBLIC SPACE

Design Guidelines

VIRGINIA DEPARTMENT OF RAIL
AND PUBLIC TRANSPORTATION



AUGUST 17, 2011

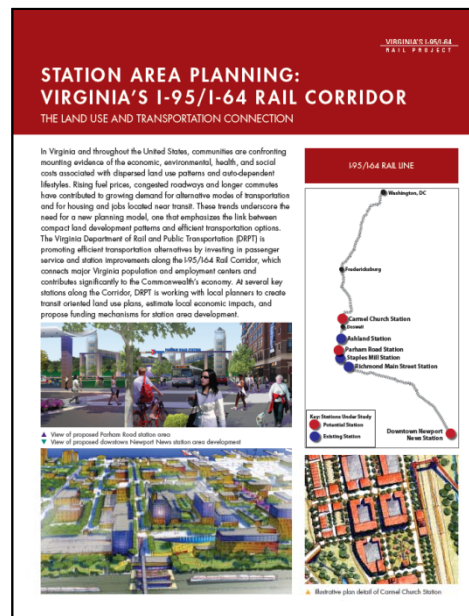
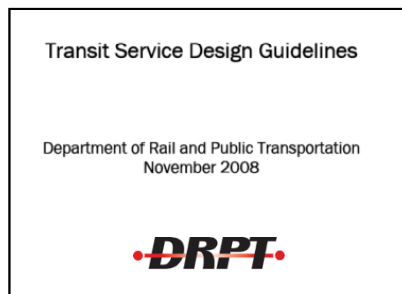
STEERING COMMITTEE MEETING

AGENDA

- Project overview & schedule
- Guidelines development
- VDOT roadways (*Brad Shelton*)
- Bus tour and corridors
- Wrap Up

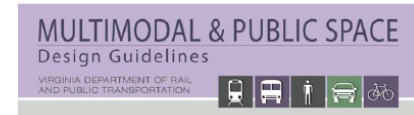
GUIDELINES & DRPT INITIATIVES

- These guidelines fit within the framework of DRPT's broader statewide policy initiatives and mission
 - Transit Service Design Guidelines
 - Amtrak Station Area Plans
 - VTrans2035 and the Virginia Surface Transportation Plan
 - Broad Street Rapid Transit Study



PROJECT OVERVIEW

- Progress to date
 - Best practices review
 - Overall methodology
 - Existing Virginia places
 - Guidelines content outline and draft concepts



Multimodal and Public Space Design Guidelines Draft Table of Contents 5/26/11

Chapter 1 - Introduction & Benefits of Multimodal Transportation

This chapter will be heavy on photographs and callout boxes (8-10 pages)

- A. Describe how the guidelines were developed and how they can be used
- B. Describe the benefits of creating optimal conditions for multimodal transportation in terms of potential for:
 - a. Encouraging more people to walk, bike, take transit
 - b. Encouraging shorter length car trips
 - c. Helping support more compact forms of development and maintain mobility
 - d. Increasing transportation choices
 - e. Decreasing travel demand for SOVs
 - f. Creating safer conditions for full range of modes

Chapter 2 - Statewide Context - Existing Communities & Transportation Characteristics

This chapter will include a 1-2 page introduction describing the Virginia context; 2 page spread on each existing community (10-15 pages)

- A. Profiles of Existing Communities in Virginia (Northern Virginia, Roanoke, Danville, Blacksburg, Charlottesville, Lynchburg, Norfolk, Richmond). Goal is to simply demonstrate that a range of conditions exist in the state and highlight some notable best practices
 - a. Physical organization of space (aerials and figure grounds)
 - b. Population and employment densities
 - c. Existing and planned multimodal system characteristic and statistics (if available)
- B. Demonstrate how these existing communities influenced the guidelines placetypes and corridors (i.e. show the transect approach in real places)

Chapter 3 - Planning Context

This chapter will likely be 20-30 pages.

- A. Placetypes - introduction of the key concepts behind the placetypes - one mile by one mile multimodal district in a range of contexts
 - a. Community Context for Placetypes based on the Transect

PROJECT OVERVIEW

- Steering Committee meeting focus
 - Direct feedback on guidelines development
 - Participatory exercises to broaden understanding of key issues



COMMITTEE FEEDBACK TO DATE

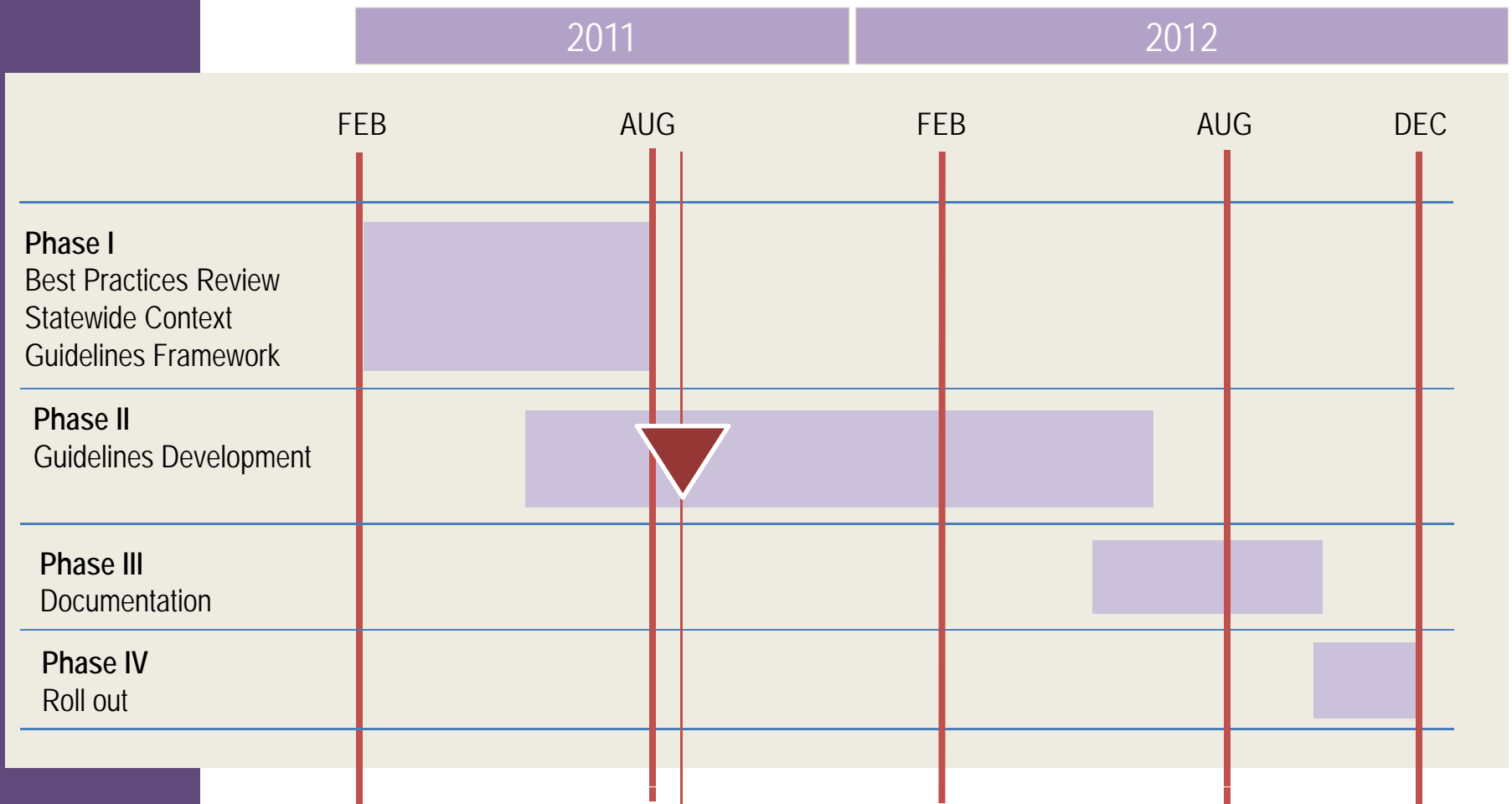
- Suggested refinements to guidelines content
 - Expand on TDM chapter
 - Expand on Multimodal Transportation Planning
 - Benefits & national trends
 - Description of various modes



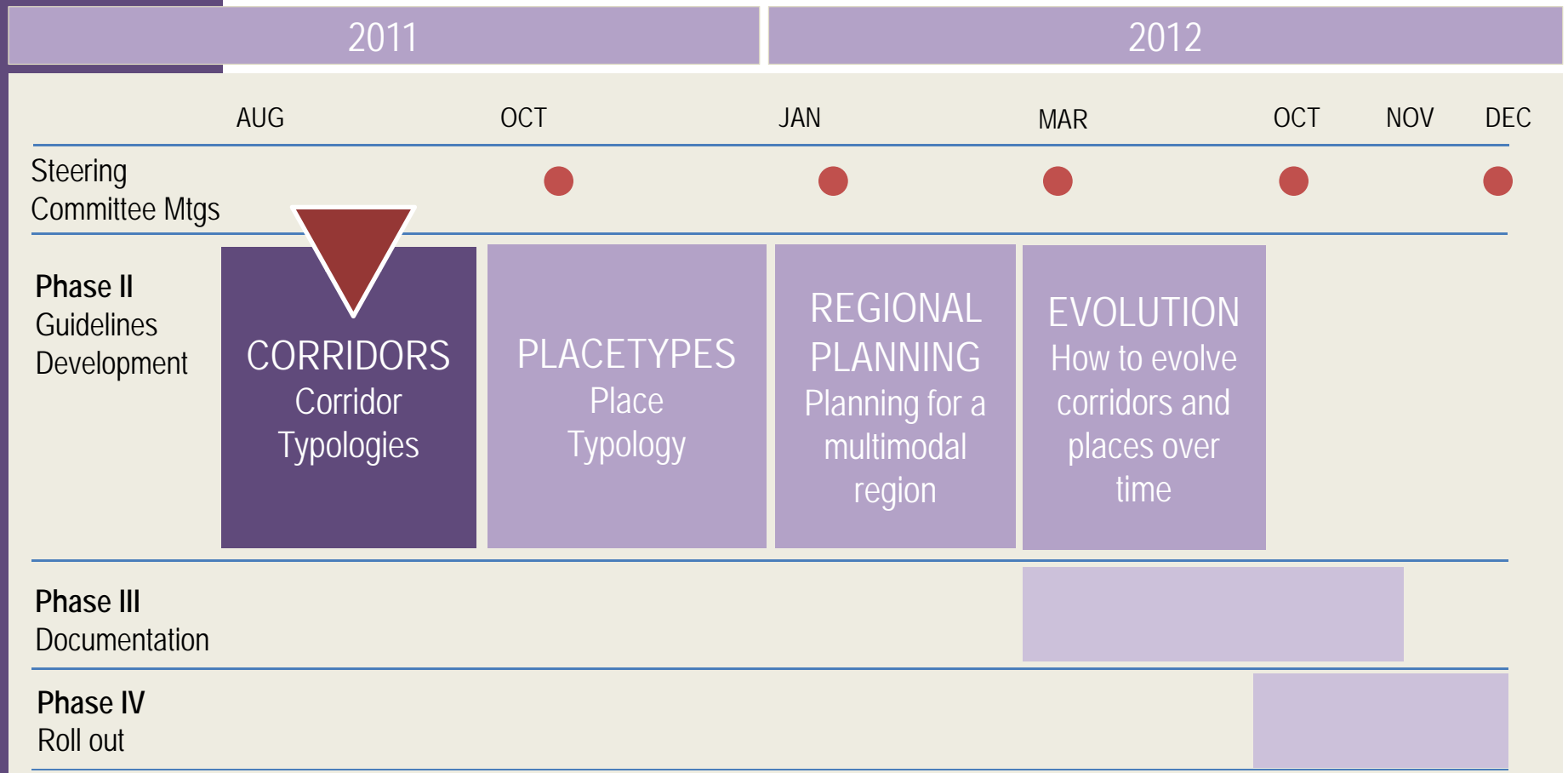
COMMITTEE FEEDBACK TO DATE

- Barriers to multimodal implementation
 - Funding
 - Land Use Decisions
 - Transit Station Access
 - Need for education on multimodal design best practices
 - Need for political advocacy
 - Limited knowledge of organization/government process and schedule
 - Parking concerns
 - Limited coordination between and within organizations and localities
 - Priority of achieving desired vehicular level of service and speed
 - Road design processes and standards
 - Limited availability of land/right-of-way
 - Physical barriers to non-motorized travel

OVERALL SCHEDULE



OVERALL SCHEDULE



MULTIMODAL:

CORRIDORS, PLACES & REGIONS

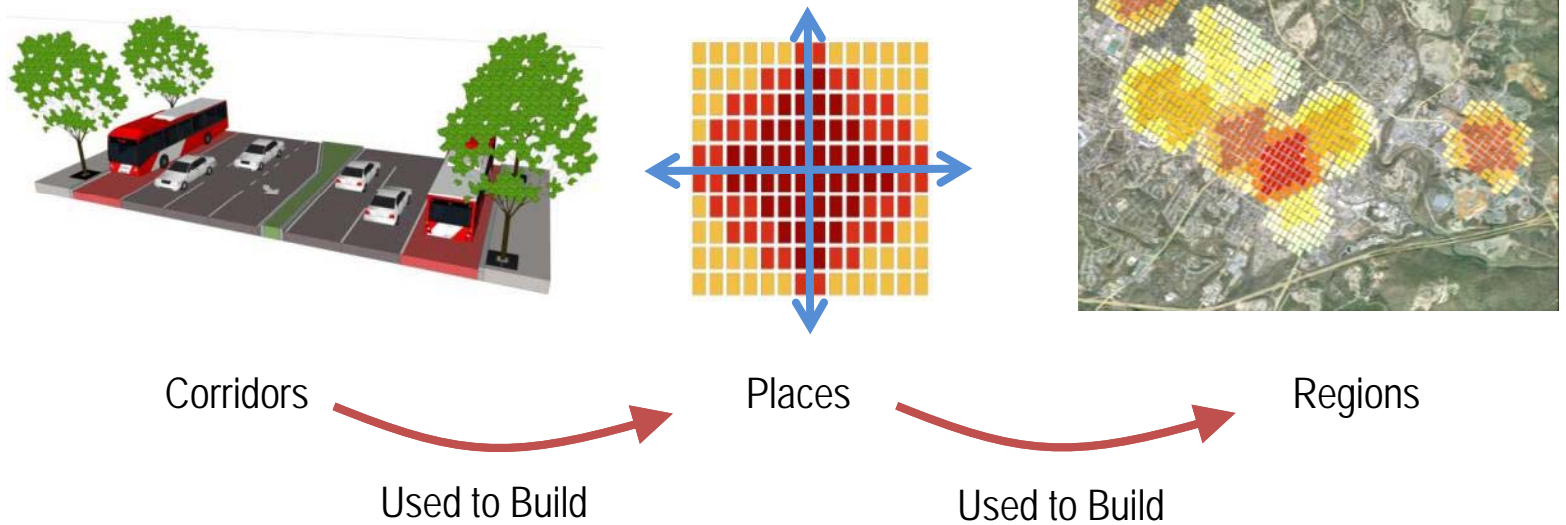
WHAT IS THE PURPOSE OF THE GUIDELINES?



- Provide guidance to planners, transit service providers, elected officials, public on developing multimodal corridor and places
- How do we get from this...
- To this...
- How do we build:
 - Corridors
 - Places
 - Regions...that are multimodal?

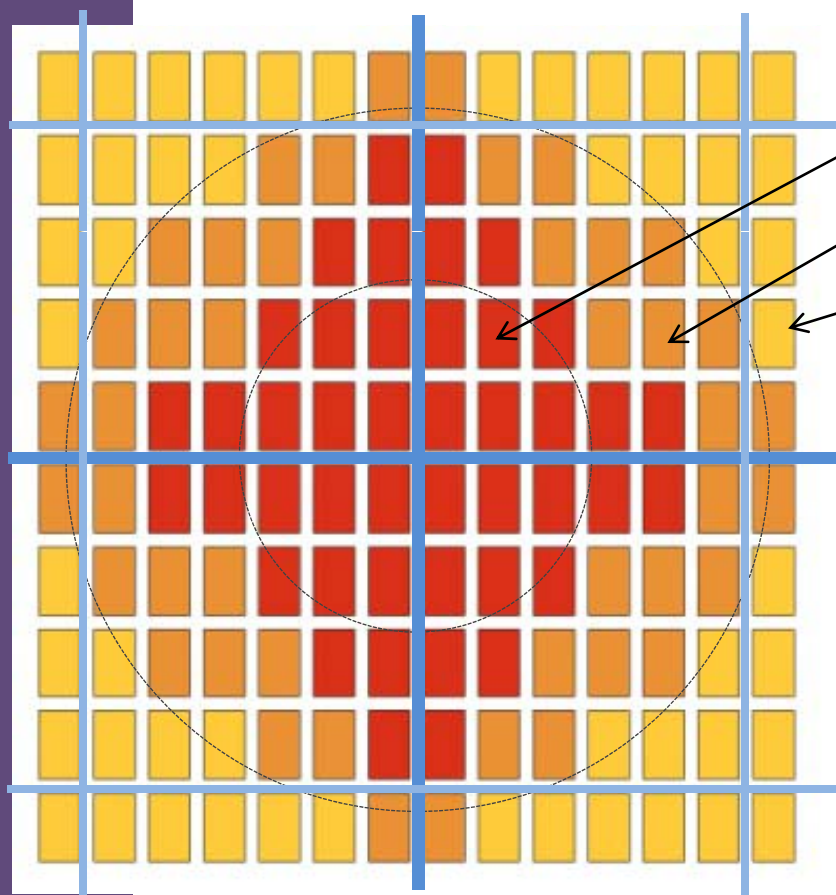
GUIDELINES FRAMEWORK

- Corridors → Places → Regions



GUIDELINES FRAMEWORK

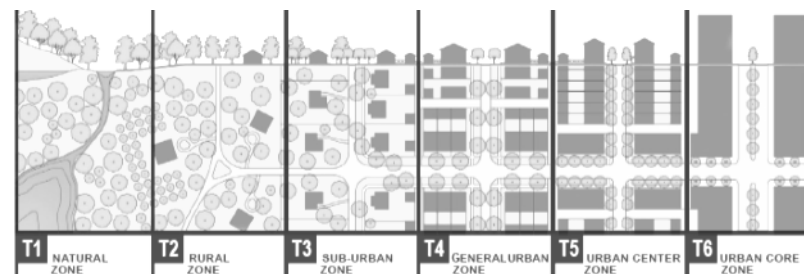
- Build Place Types using Transect Zones



CORE – about ¼ mile

EDGE – about ½ mile

FRINGE – about 1 to 3 miles



Levels of development intensity

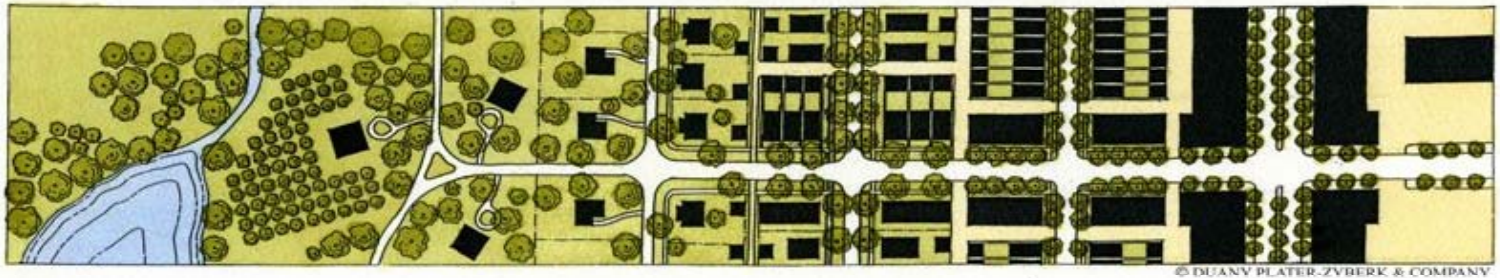
T-3 T-4 T-5 T-4 T-3



Low Med High Med Low

GUIDELINES FRAMEWORK

- The Transect



LOW

→ HIGH

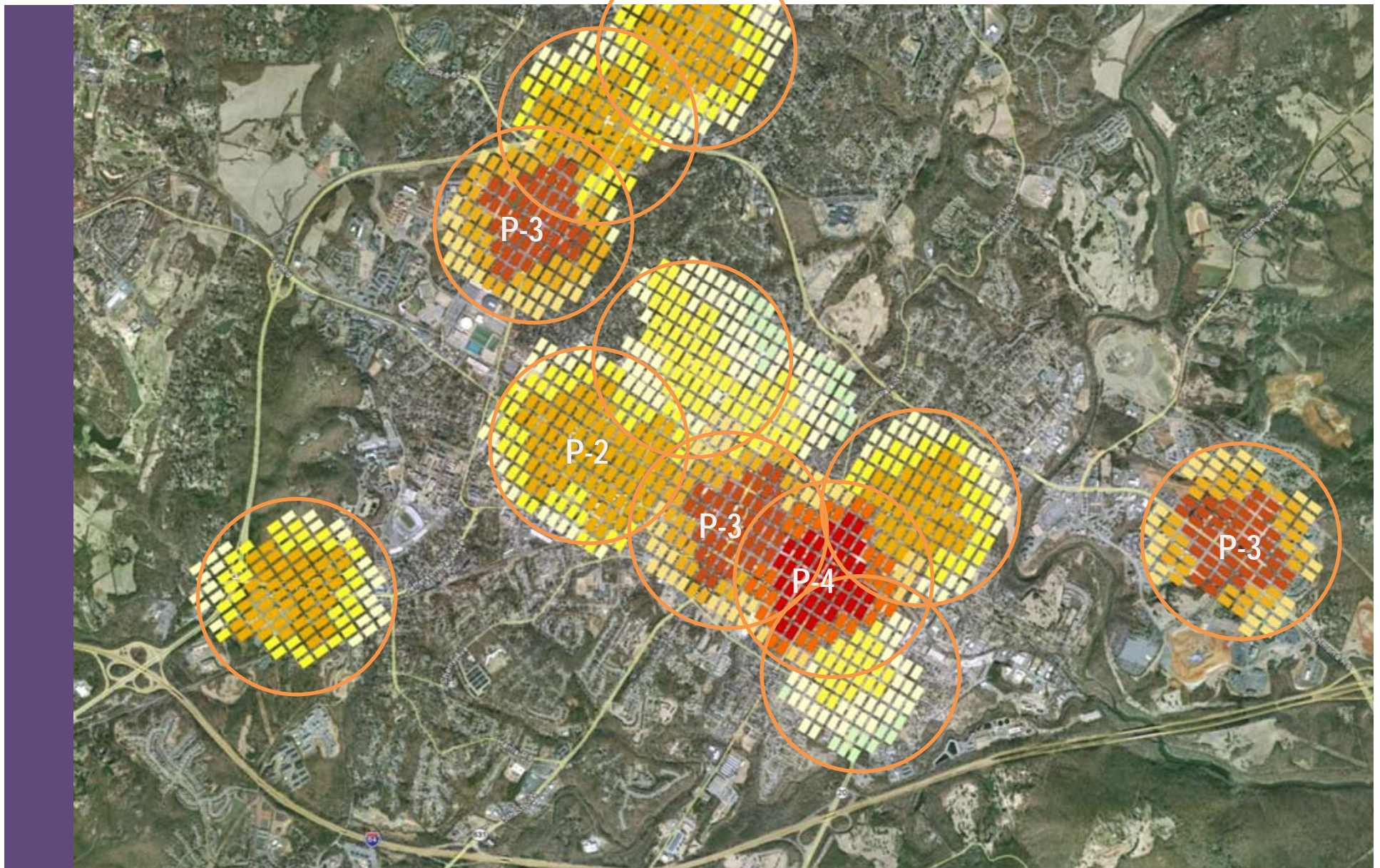
Development Intensity

PLACE TYPES

- Place types reflect different community conditions from rural to urban



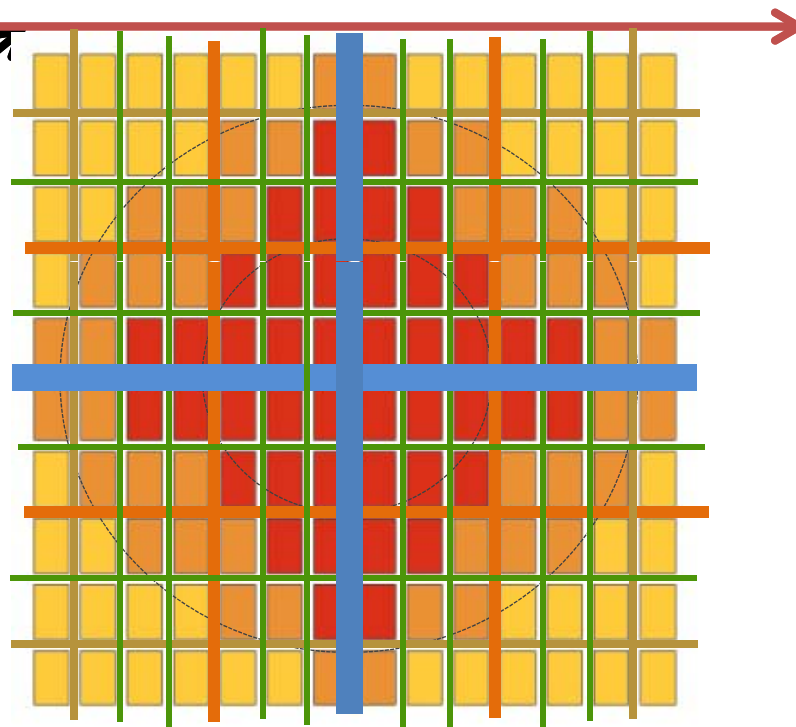
PLACE TYPES IN A REGION








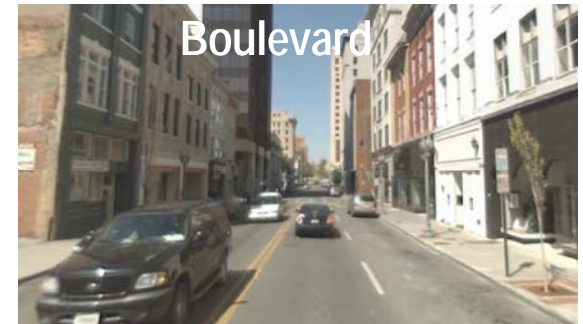
CORRIDOR TYPOLOGY

- Build Corridor Types based on Place Types

CONNECTOR
STREETS
(mobility
primary)



- | | | |
|---|---|-------------------|
| A |  | TRANSIT BOULEVARD |
| B |  | BOULEVARD |
| C |  | MAIN STREET |
| D |  | AVENUE |
| E |  | LOCAL STREET |



Jefferson St. Roanoke



Water St. Petersburg



Main St. Sperryville

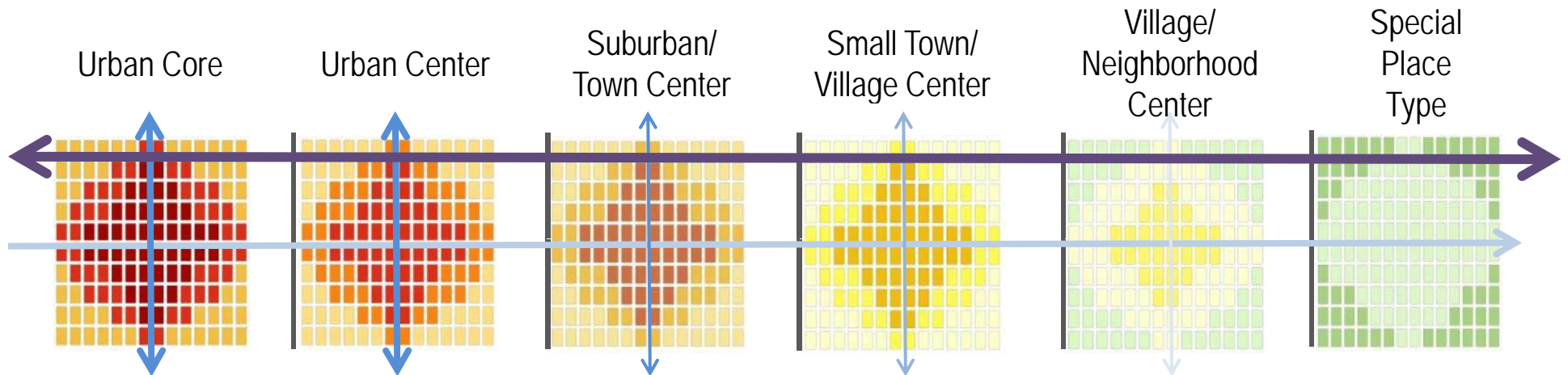
PLANNING CONTEXT

- Corridor Types reflect different street conditions from rural to urban



MULTIMODAL CORRIDORS

CORRIDOR TYPES RELATE TO PLACE TYPES



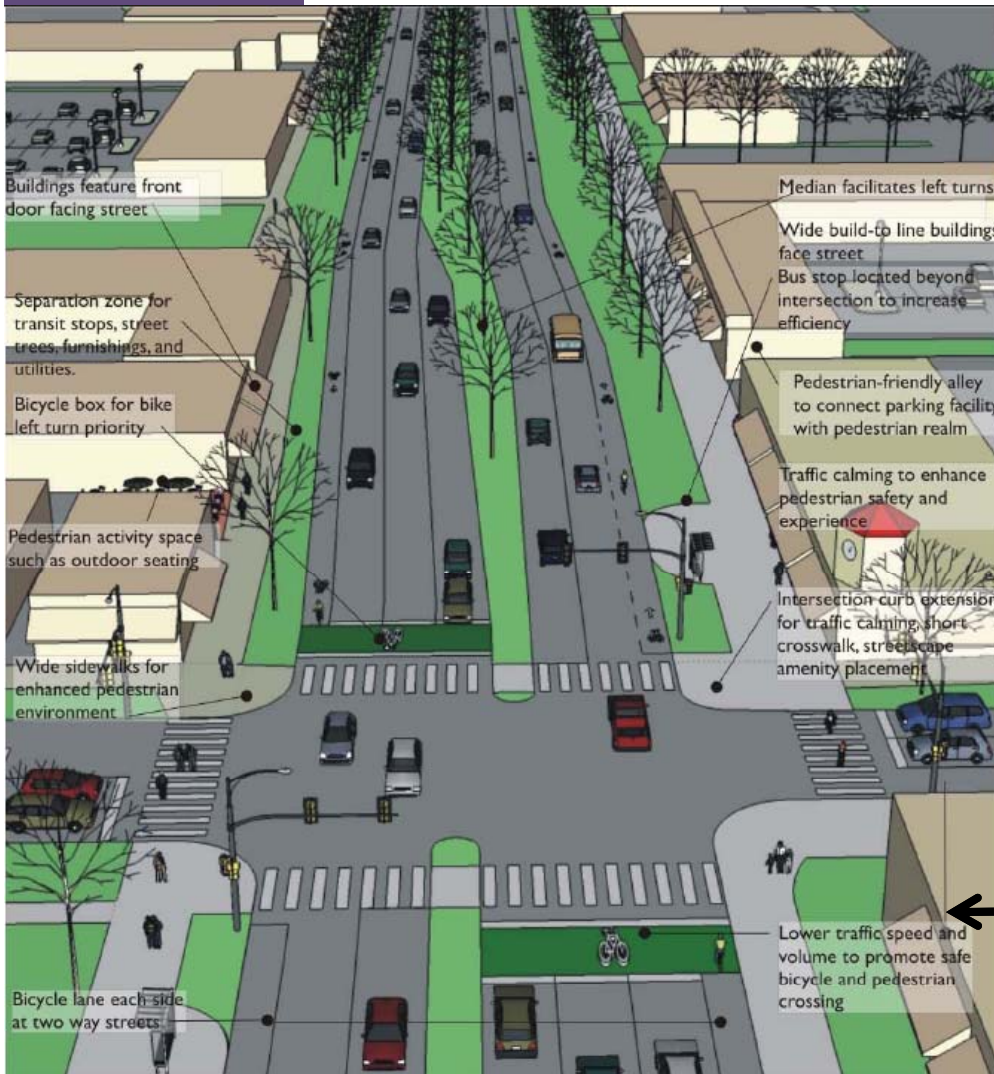
P-6	P-5	P-4	P-3	P-2	P-1
Transit Boulevard					
Boulevard					
			Main Street		
Avenue					
Local Street					

MULTIMODAL CORRIDORS

CORRIDOR TYPES RELATE TO VDOT FUNCTIONAL CLASSES

Interstate, Freeway or Expressway	Urban Other Principal Arterial	Urban Minor Arterial	Urban Collector	Local Street
Connector Street (not part of Guidelines)				
	Transit Boulevard			
	Boulevard			
		Main Street		
		Avenue		
			Local Street	

MULTIMODAL CORRIDORS



Indianapolis MPO

- Purpose of guidelines is not to supplant VDOT Road Design standards
- Guidelines will meet or exceed VDOT standards
- Guidelines will add more detail for multimodal aspects of corridor design

← (Example of what the guidelines will look like)

■ There are 5 Corridor Types:

1. Transit Boulevard

- Boulevard with dedicated right-of-way for transit (Bus Rapid Transit, Light Rail, Heavy Rail)

2. Boulevard

- Highest multimodal capacity – connects districts
- High density of land use/destinations & mix of modes
- Four to six lanes – usually w/median + bike/ped/transit
- Wide sidewalks, street trees, on-street parking, potential bike lanes

3. Main Streets

- Essentially boulevards in less intense places

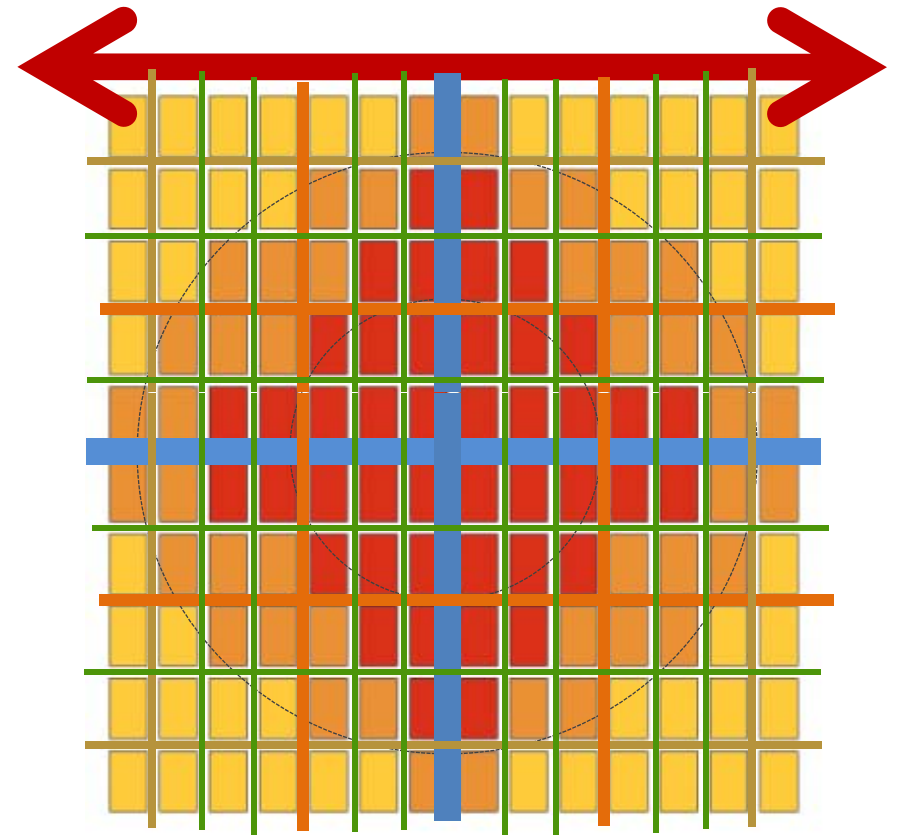
4. Avenues






- Moderate capacity – connects neighborhoods
- Two to four lanes – bus transit
- On-street parking
- Wide sidewalks, potential bike lanes or shared lanes

5. Local Streets

- Lowest capacity – connects within a neighborhood
- Two lanes – may have bus transit
- Sidewalks, trails, shared lanes for bikes
- Planting strips and street trees

MULTIMODAL CORRIDORS

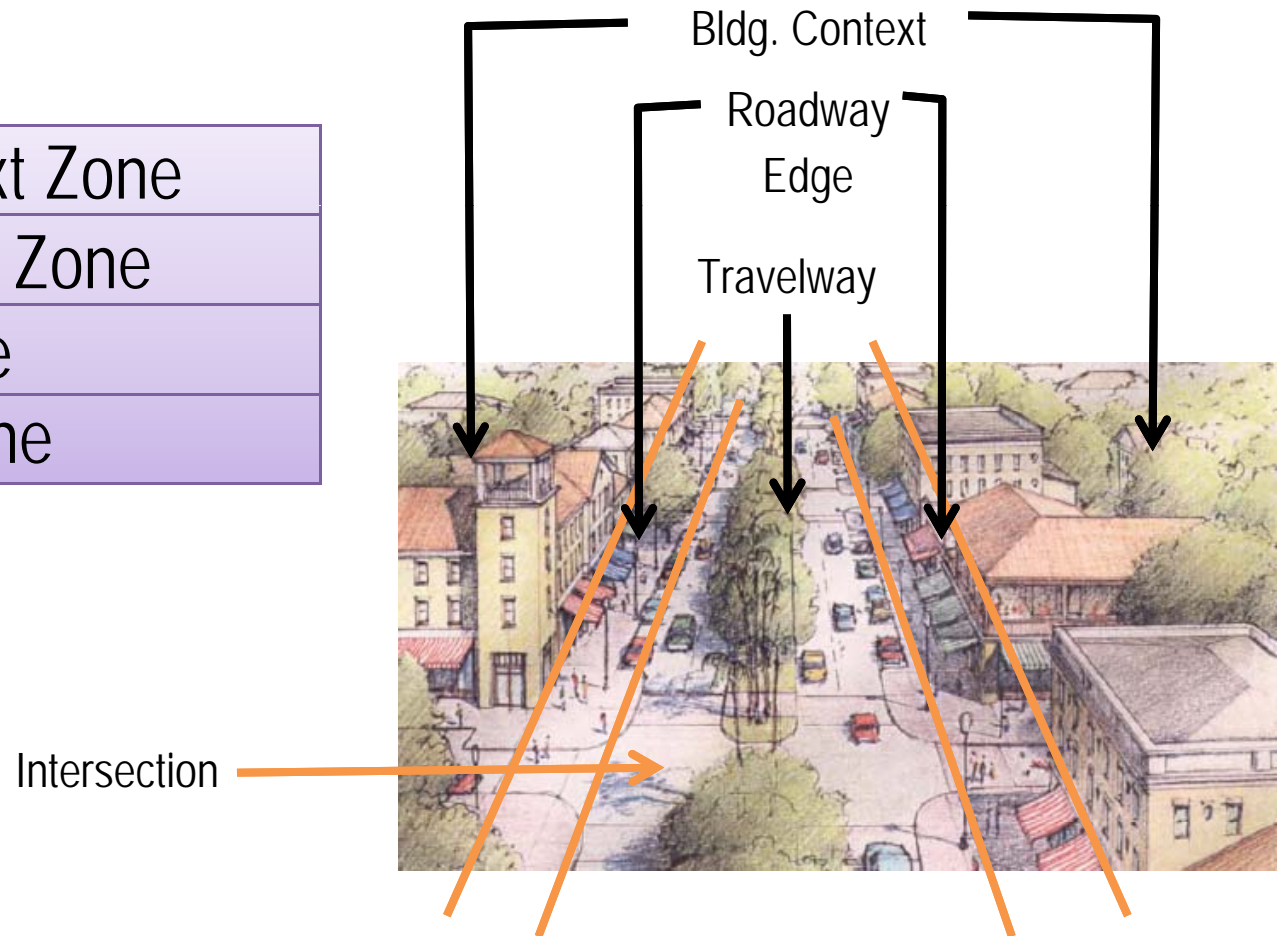


- A  TRANSIT BOULEVARD
- B  BOULEVARD
- C  MAIN STREET
- D  AVENUE
- E  LOCAL STREET

MULTIMODAL CORRIDORS

- There are 4 “zones” on a corridor:

1. Building Context Zone
2. Roadway Edge Zone
3. Travelway Zone
4. Intersection Zone

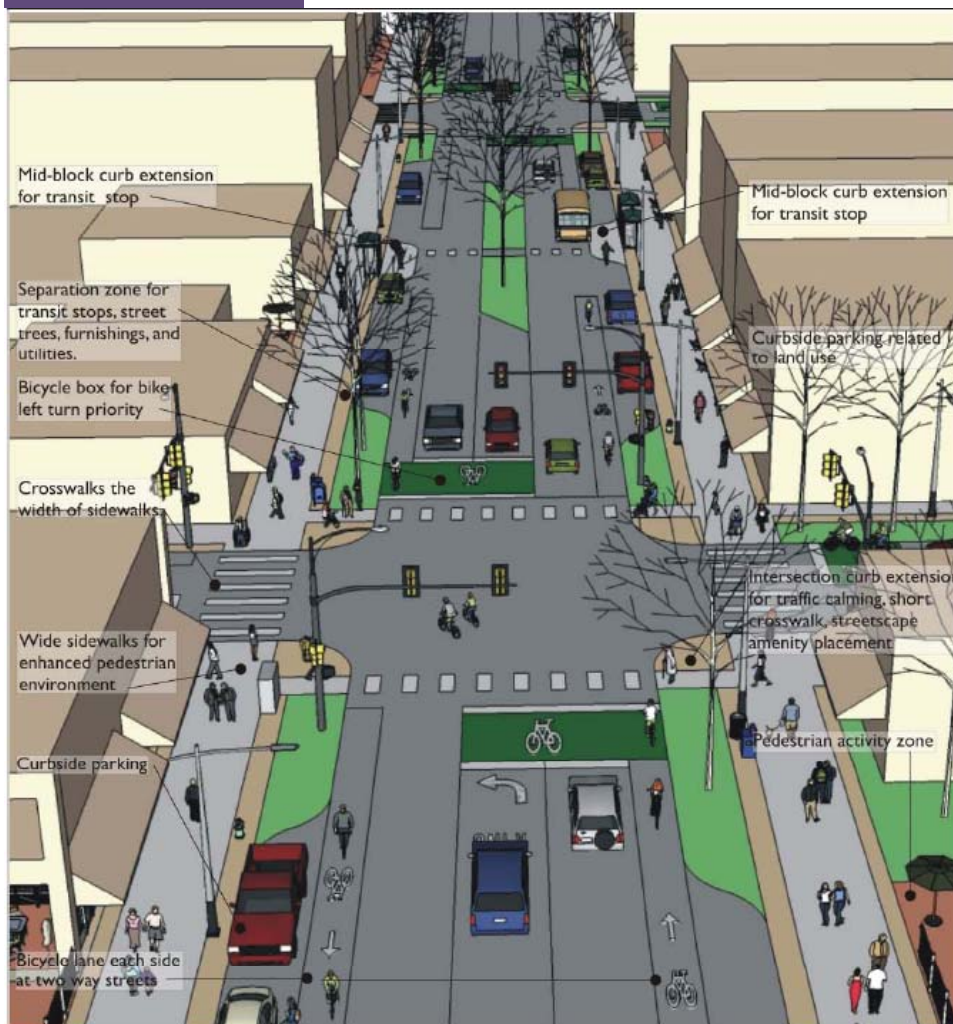


CORRIDOR DESIGN CHARACTERISTICS

	Corridor Types																					
Corridor Characteristics		Transit Boulevard			Boulevard			Main Street			Avenue						Local Street					
		T6	T5	T4	T6	T5	T4	T3	T2	T1	T6	T5	T4	T3	T2	T1	T6	T5	T4	T3	T2	T1
	Building Context																					
	Roadway Edge				Specific metrics for each corridor type and characteristic																	
	Travelway				Specific metrics for each corridor type and characteristic																	
	Intersection																					
	Block Size																					
	Transit																					

Specific metrics for each corridor type and characteristic

CORRIDOR DESIGN CHARACTERISTICS

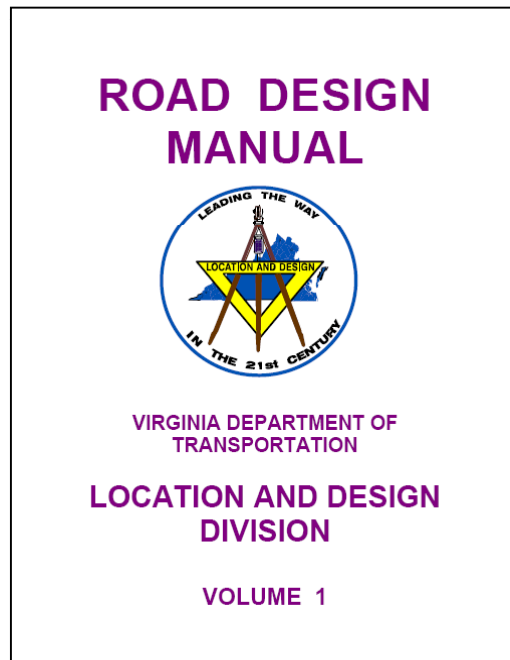


Indianapolis MPO

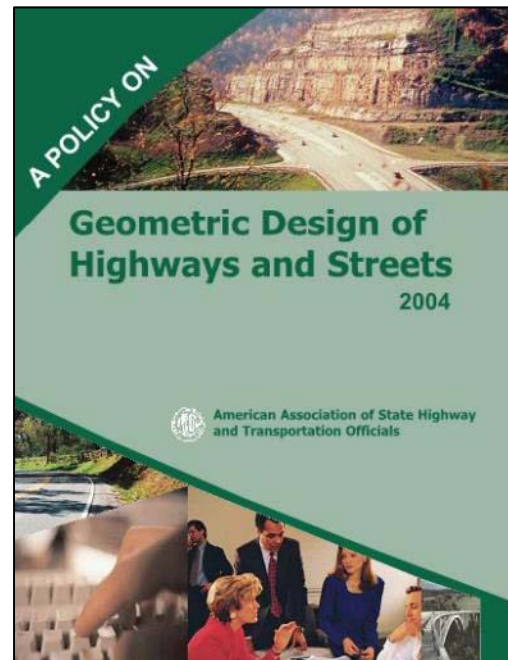
- Building Context Zone
 - Building Setbacks
 - Off Street Parking
 - Building Entry Locations
- Roadway Edge Zone
 - Clear Zone Width
 - Buffer/Planting Zone Width
 - Sidewalk Width
 - Lighting
- Travelway Zone
 - Design/Posted Speed
 - Number of Thru Lanes
 - Lane Width
 - On Street Parking
 - Bicycle Accommodations
 - Medians
- Intersection Zone
 - Curb Return Radii
 - Appropriate Crossover Types
 - Crosswalk Width
- Block Size / Road Spacing
 - Access Management Features
- Transit Features
 - Transit Technology
 - Guideway Location
 - Station Spacing

INDUSTRY STANDARDS

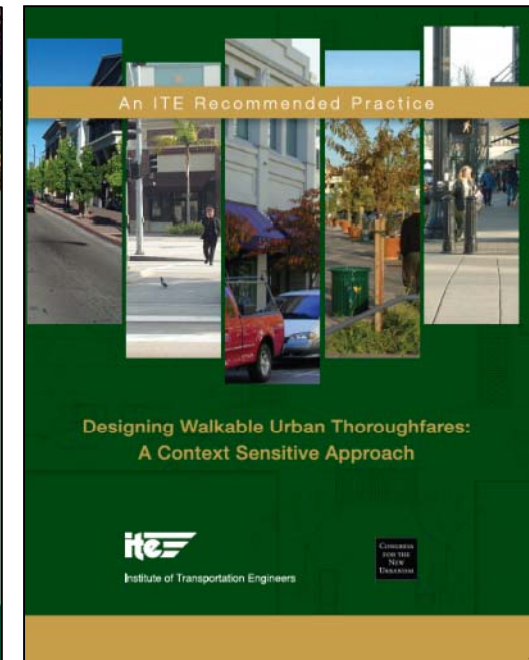
- Corridor design characteristics:
 - Build on national research
 - Don't override accepted engineering standards



VDOT



AASHTO



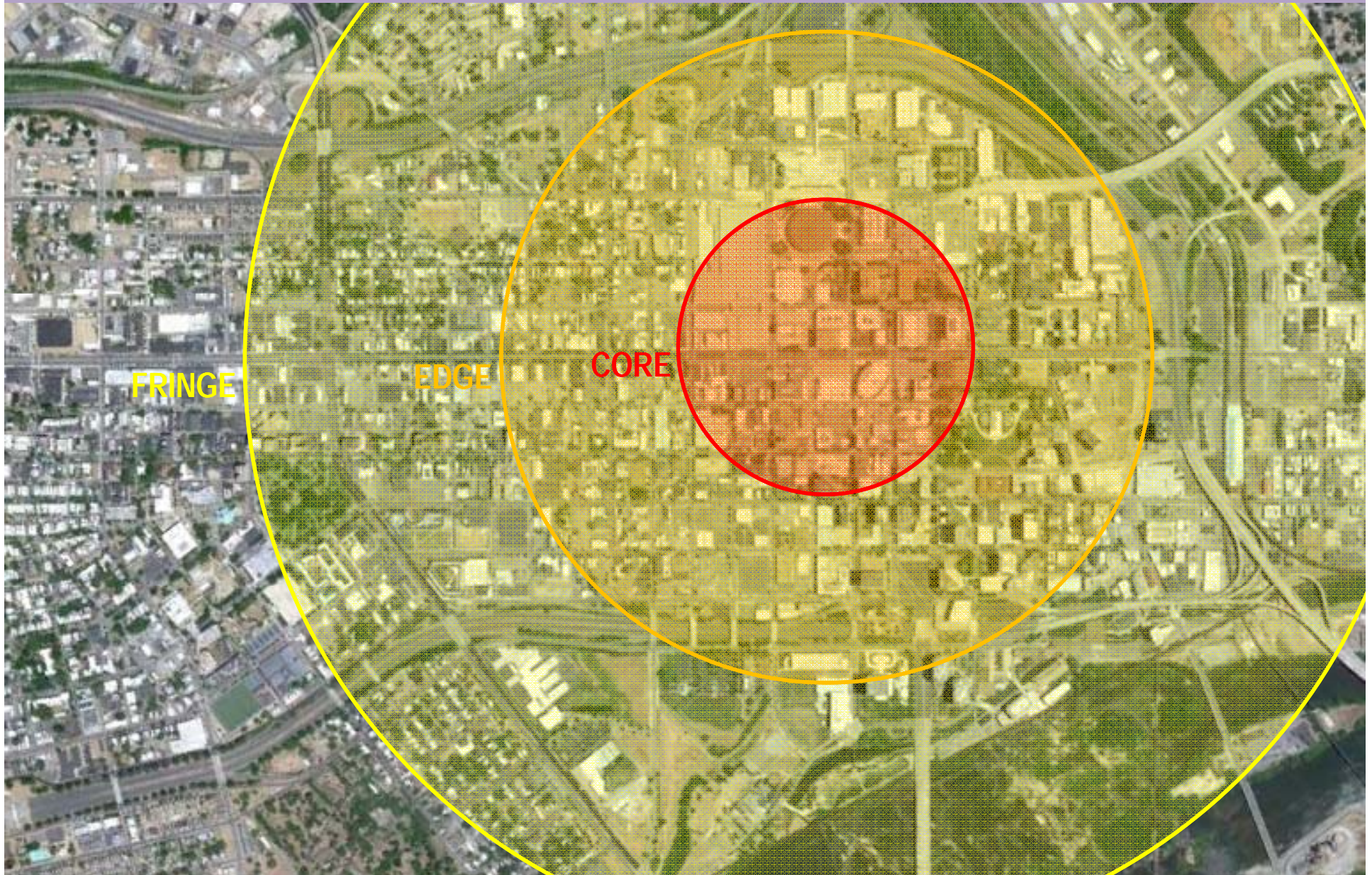
ITE & CNU

HOW CAN THESE TYPOLOGIES WORK IN REAL PLACES?

SOME POTENTIAL EXAMPLES

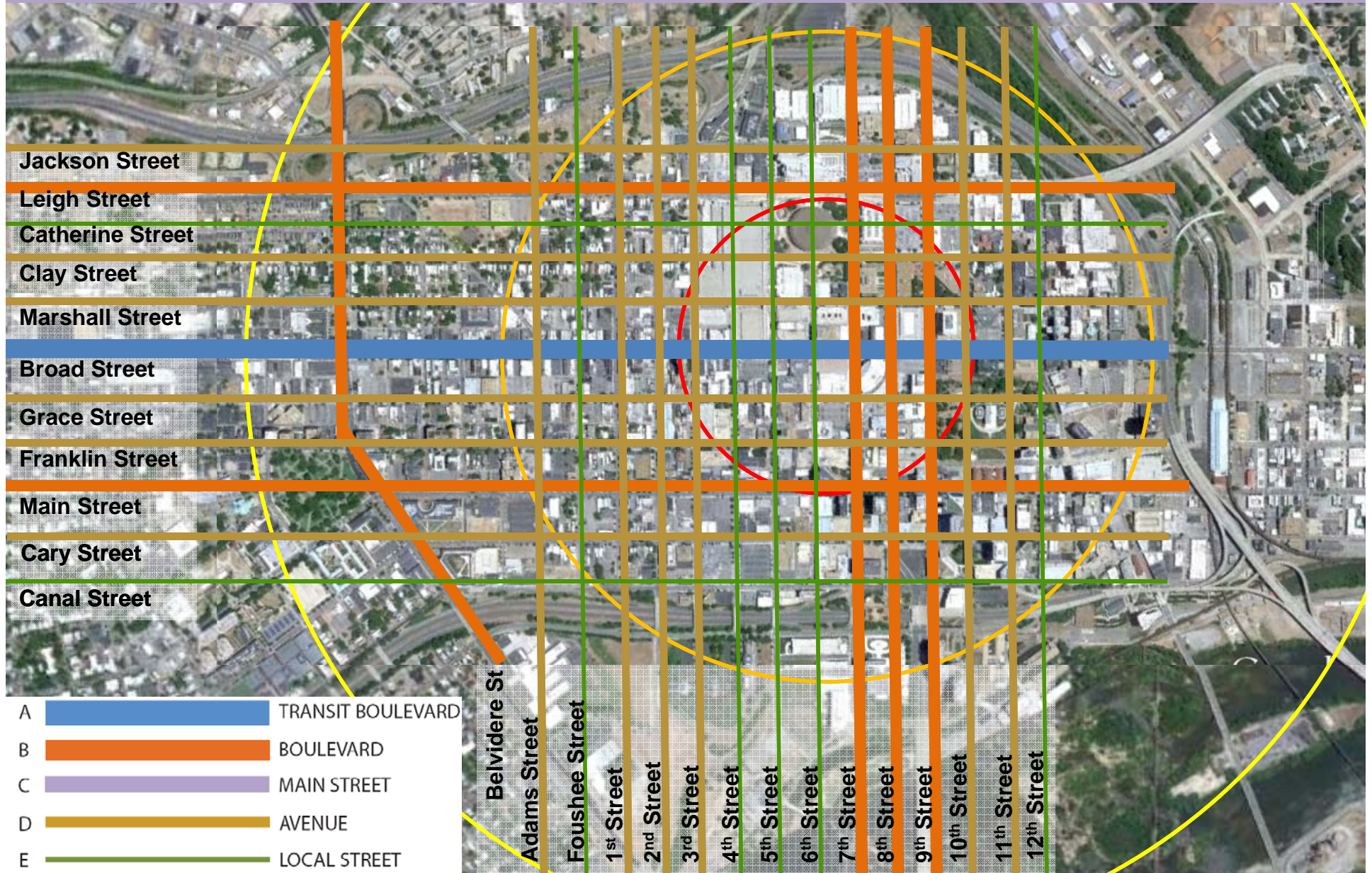
DOWNTOWN RICHMOND

DEFINING DENSITY/INTENSITY ZONES



DOWNTOWN RICHMOND

DEFINING POTENTIAL CORRIDOR TYPOLOGY



Typical features listed – “check” if present

TRANSIT BOULEVARD

- Core
 - Dedicated transit lane
 - 6-10+ story bldgs. ✓
 - 0'-10' bldg. setback ✓
 - 10'-20' sidewalks ✓



- Edge
 - 4-6 story bldgs. ✓
 - 10'-20' bldg. setback
 - 8'-15' sidewalks ✓
 - 6'-8' planting strip
 - 2-4 travel lanes ✓

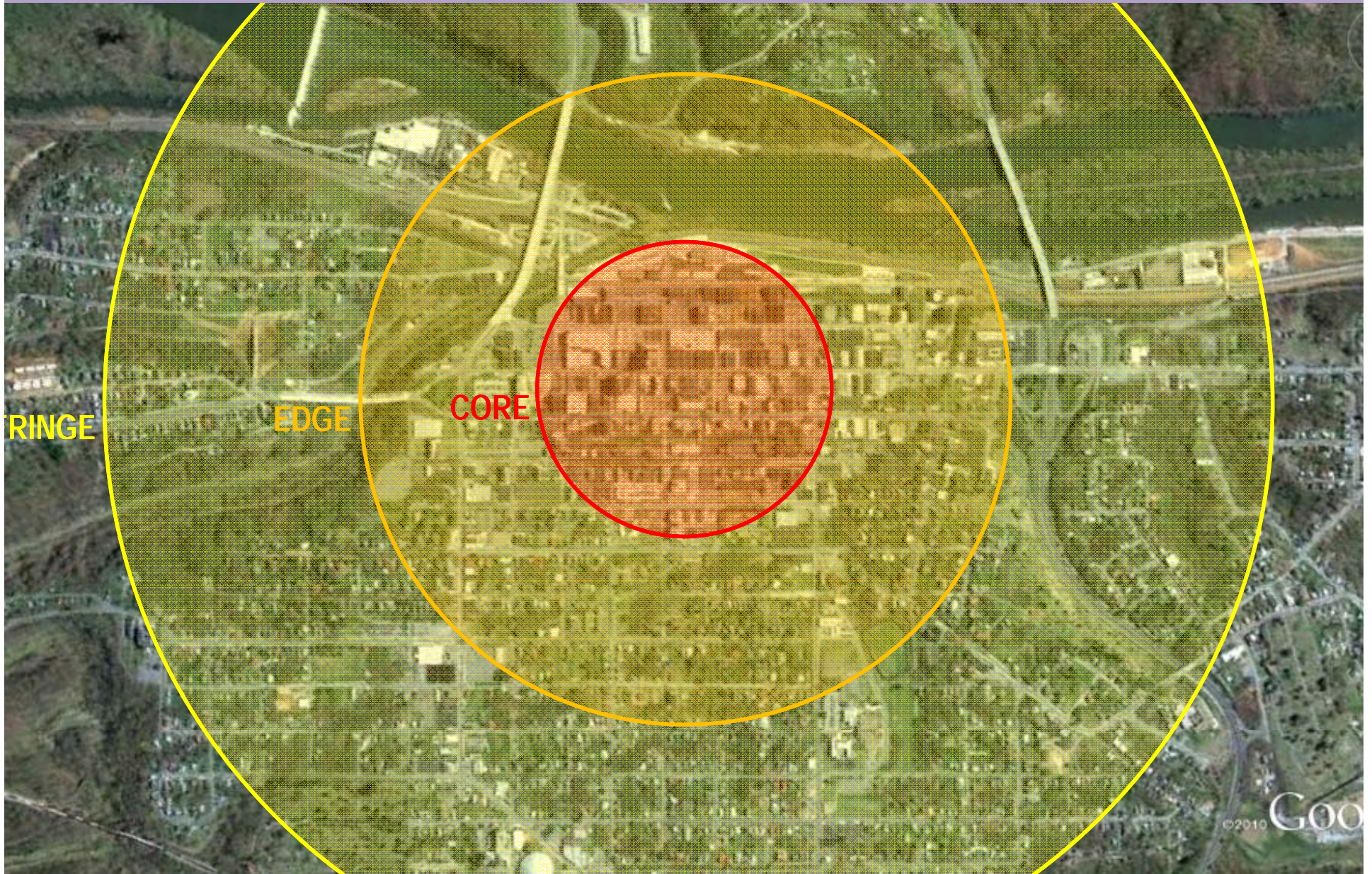


- Fringe
 - 2-4 story bldgs. ✓
 - 7'-12' sidewalks ✓
 - 6'-8' planting strip
 - 2-4 travel lanes ✓
 - 25-30 mph travel speed ✓



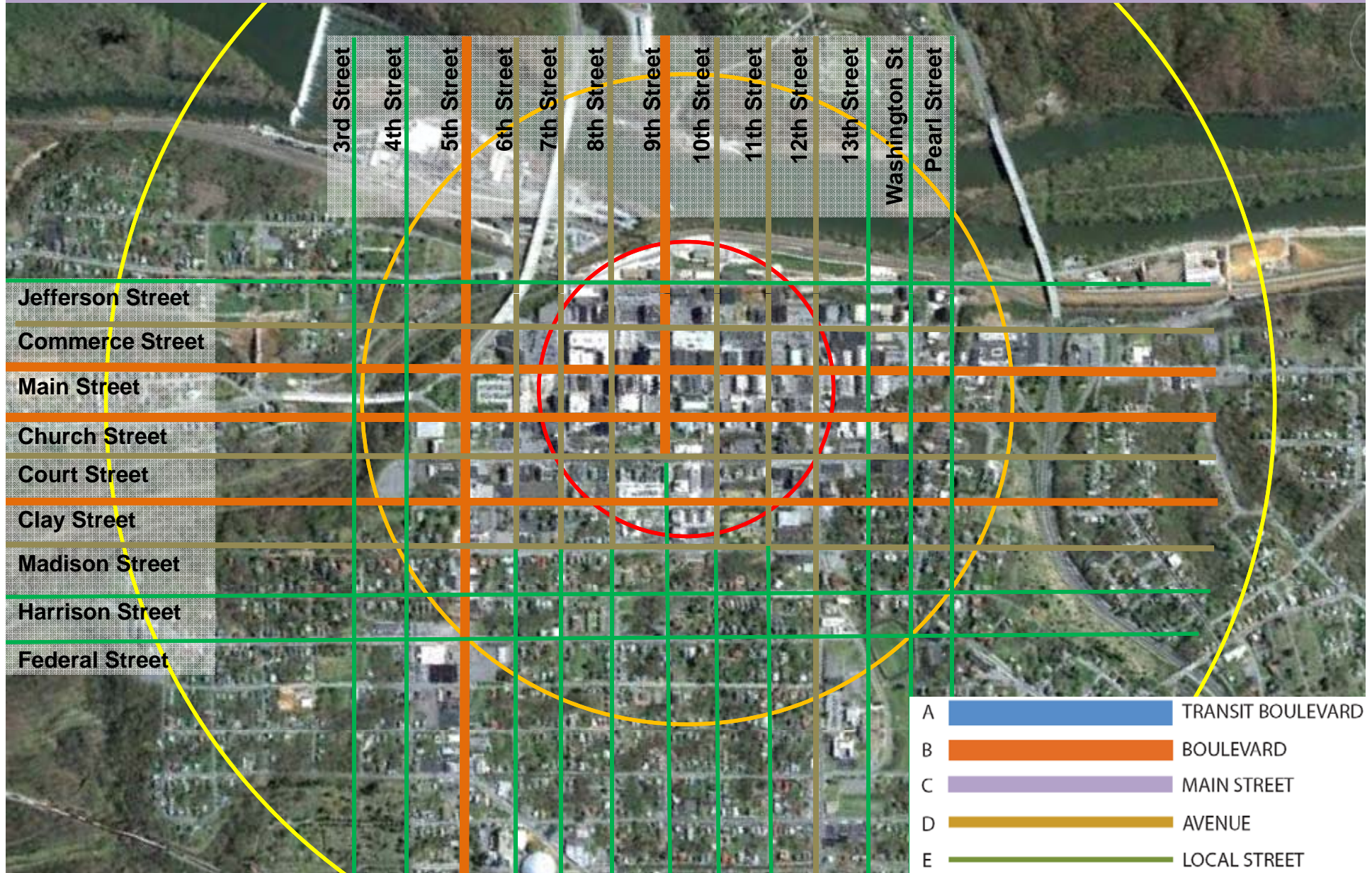
DOWNTOWN LYNCHBURG

DEFINING DENSITY/INTENSITY ZONES



DOWNTOWN LYNCHBURG

DEFINING POTENTIAL CORRIDOR TYPOLOGY



Typical features listed – “check” if present

AVENUE

■ Core

- 3-6 story bldgs. ✓
- 2 lanes + parking ✓
- 10'-11' travel lanes ✓
- 4' bike lanes
- 12-15' sidewalks



■ Edge

- 2-4 story bldgs. ✓
- 5'-10' bldg setbacks
- 2 lanes + parking ✓
- 10' travel lanes ✓
- 4' bike lanes
- 8'-12' sidewalks



■ Fringe

- 1-3 story bldgs. ✓
- 10'-20' bldg. setbacks
- 2 lanes + parking ✓
- Shared lanes with “sharrow”
- 6'-8' sidewalks



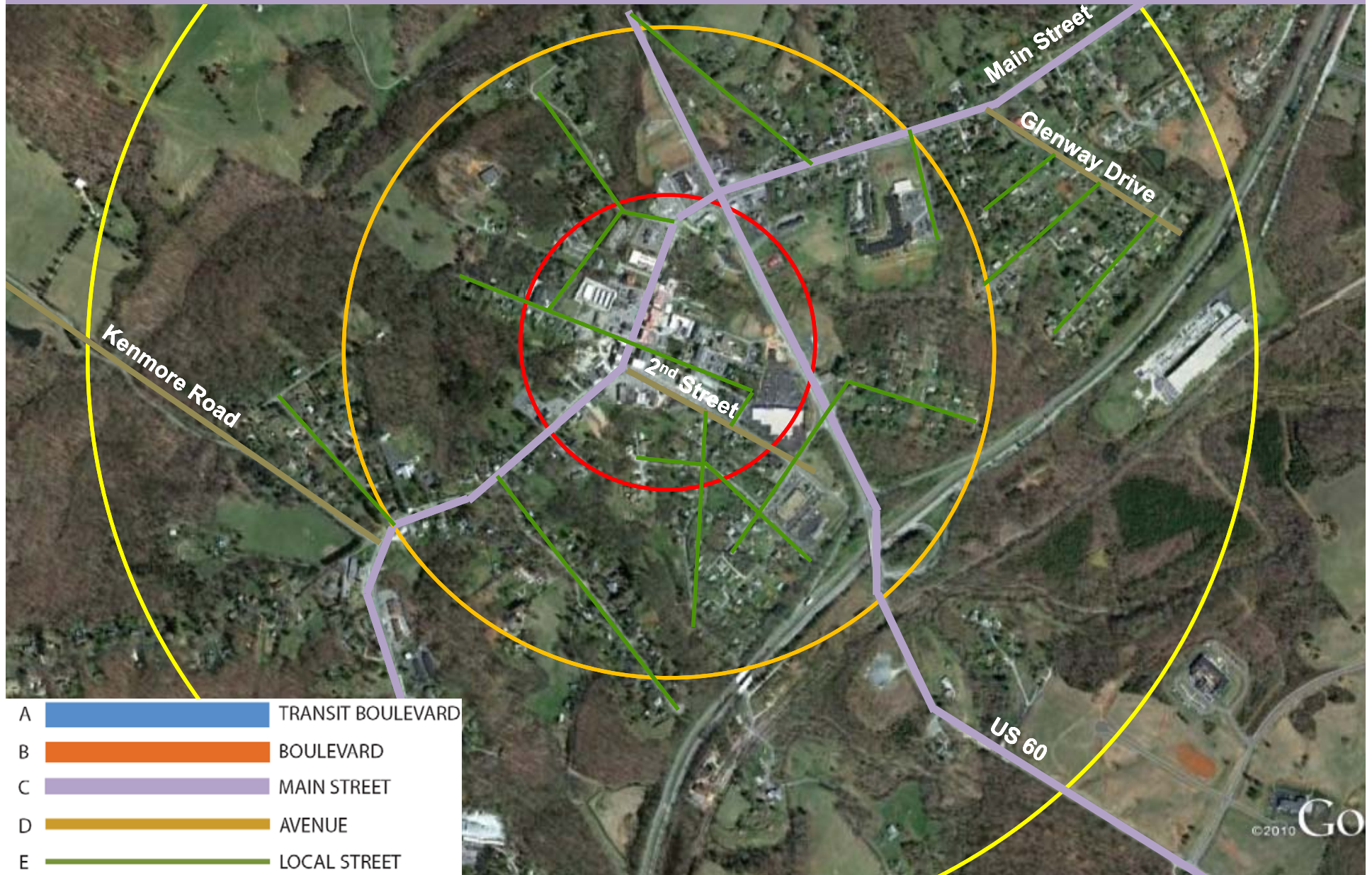
AMHERST

DEFINING DENSITY/INTENSITY ZONES



AMHERST

DEFINING POTENTIAL CORRIDOR TYPOLOGY



Typical features listed – “check” if present

MAIN STREET

■ Core

- 2-4 story bldgs. ✓
- 2 lanes + parking
- 10'-11' travel lanes
- 4' bike lanes
- 12-15' sidewalks



Core

■ Edge

- 2-3 story bldgs. ✓
- 5'-10' bldg setbacks ✓
- 2 lanes + parking
- 10'-11' travel lanes
- 4' bike lanes
- 6'-8' sidewalks



Edge

■ Fringe

- 1-2 story bldgs. ✓
- 15'-30' bldg. setbacks
- 2 lanes + shoulder
- Marked bikable shoulder
- 5'-8' sidewalks



Fringe

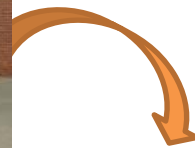
BALANCING USER NEEDS



EXISTING



POTENTIAL



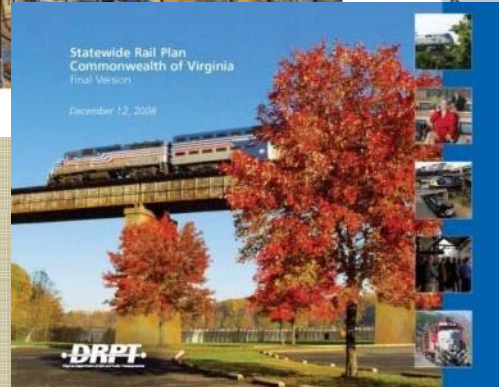
It will be important to make adjustments for real world constraints

ESPECIALLY IMPORTANT IF THERE IS A CONSTRAINED RIGHT OF WAY!

TOD 203

TRANSIT CORRIDORS AND TOD

Connecting The Dots



IS REGIONAL CENTER & METROPOLITAN PLANNING AREA

AL CORRIDOR AND PUBLIC SPACE DESIGN GUIDELINES

AUGUST 2011



Street Design Guidelines

City of Roanoke, Virginia



WHAT WILL THE GUIDELINES FOR
CORRIDORS LOOK LIKE?

CORRIDOR GUIDELINES

SUMMARY DRAWINGS OF CORRIDOR TYPES



MATRIX DESCRIBES FEATURES

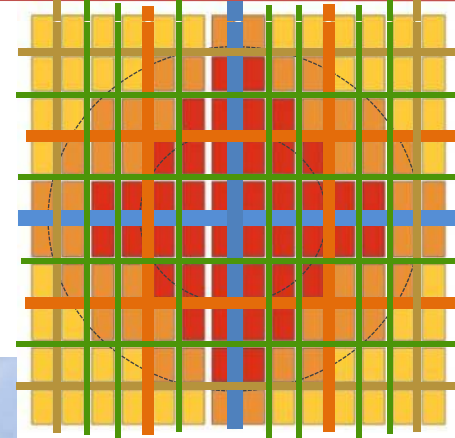
Indianapolis Regional Center & Metropolitan Planning Area
Multi-Modal Corridor Typology Matrix

Corridor Type	Location	Length	Width	Speed	Mode	Access	Land Use	Design	Notes
1. Downtown Core	Downtown	1.5 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Core of downtown
2. Urban Center	Urban	2.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Urban center
3. Transit Corridor	Transit	3.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Transit corridor
4. Main Street	Main Street	4.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Main street
5. Regional Center	Regional Center	5.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Regional center
6. Suburban Center	Suburban Center	6.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Suburban center
7. Rural Center	Rural Center	7.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Rural center
8. Edge City	Edge City	8.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Edge city
9. Suburban	Suburban	9.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Suburban
10. Rural	Rural	10.0 miles	100 feet	30 mph	Walking, Bicycling, Transit, Vehicle	High	High Density	Urban Form	Rural

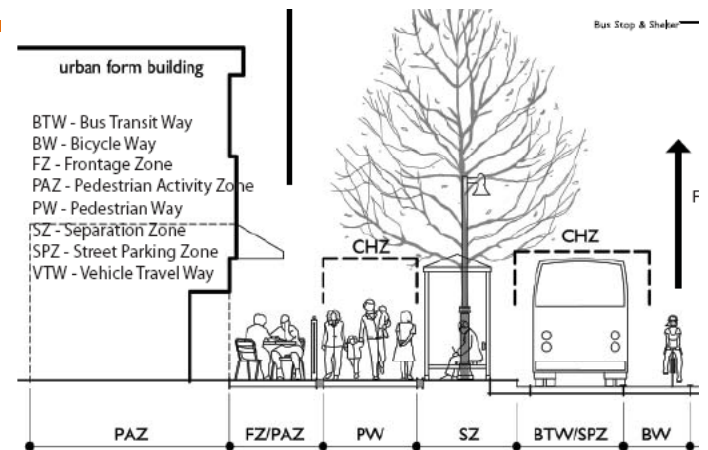
VISUALIZATIONS



RELATION TO PLACE TYPES

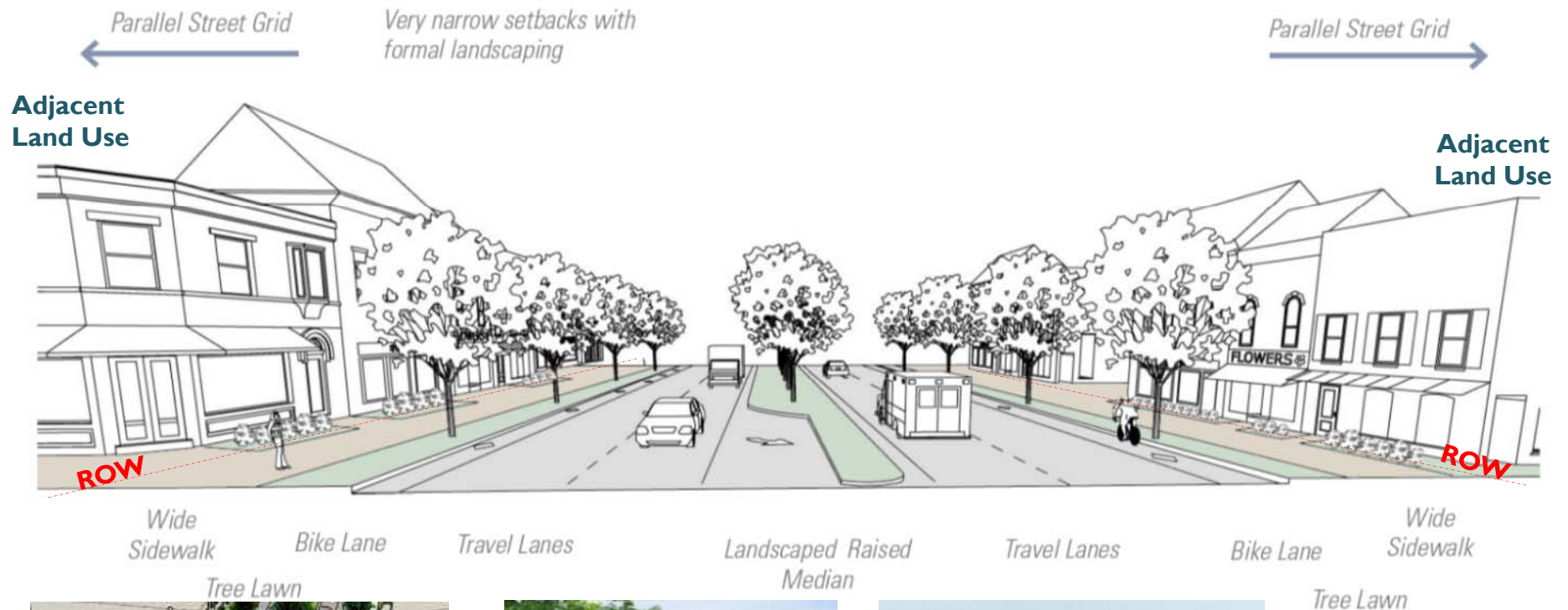


DETAILED STANDARDS



MULTIMODAL CORRIDORS

- Detailed cross sections & visualizations



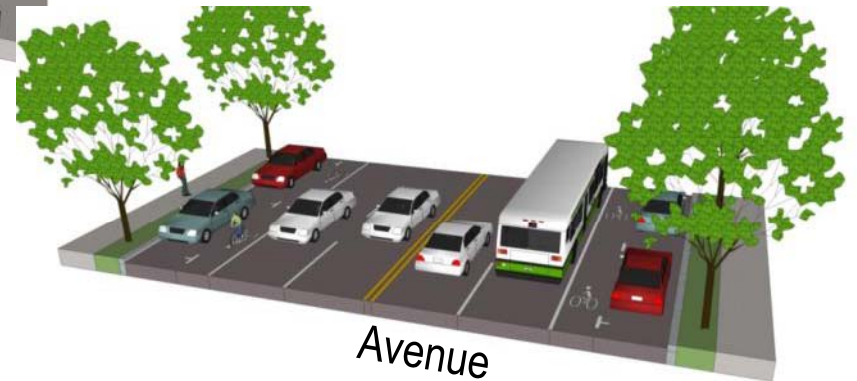
HOW TRANSIT CAN WORK IN THE CORRIDOR TYPOLOGY



Express Bus Transit Boulevard



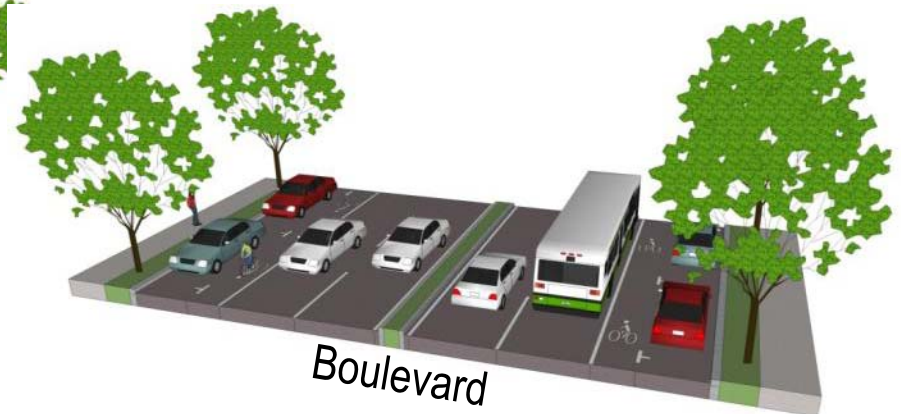
Local Street



Avenue



Light Rail Transit Boulevard



Boulevard

HOW CAN THESE GUIDELINES BE USED?

MULTIMODAL & PUBLIC SPACE
DESIGN GUIDELINES



↑ DETAILED CORRIDOR TYPE
GUIDELINES ↑

ROAD DESIGN MANUAL



VIRGINIA DEPARTMENT OF
TRANSPORTATION

LOCATION AND DESIGN
DIVISION

VOLUME 1

CURRENT CONDITION



EXAMPLE APPLICATION:

Locality receives funding to do a corridor improvement plan & wants to incorporate multimodal planning principles

POTENTIAL FUTURE IMPROVEMENT

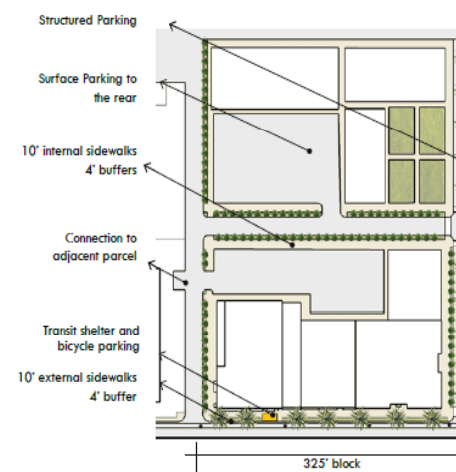


INFORM

REGULATE

WHAT IS THE VALUE OF THESE GUIDELINES?

- Common language to describe multimodal corridors, place types
- Unified set of “best practices” for multimodal design, TDM & transit-supportive design
- A statewide resource for planners, transit professionals, elected officials and the public



MULTIMODAL CORRIDORS

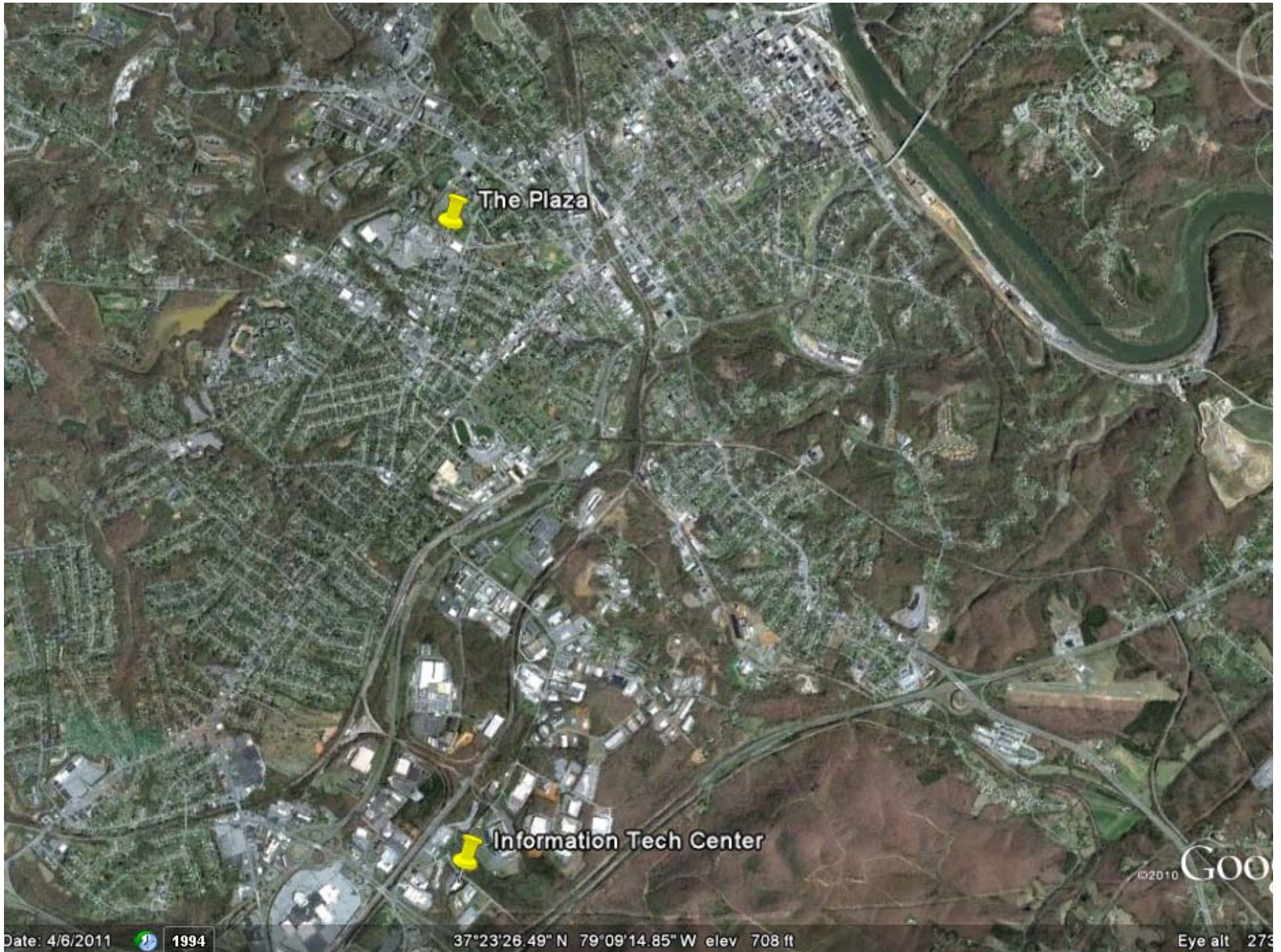
OPEN DISCUSSION

VDOT FUNCTIONAL CLASSIFICATION

BRAD SHELTON, AICP
STATE HIGHWAY PLAN PROJECT MANAGER
VIRGINIA DEPARTMENT OF TRANSPORTATION

PLACETYPES AND CORRIDORS

LYNCHBURG BUS TOUR



The Plaza

Information Tech Center

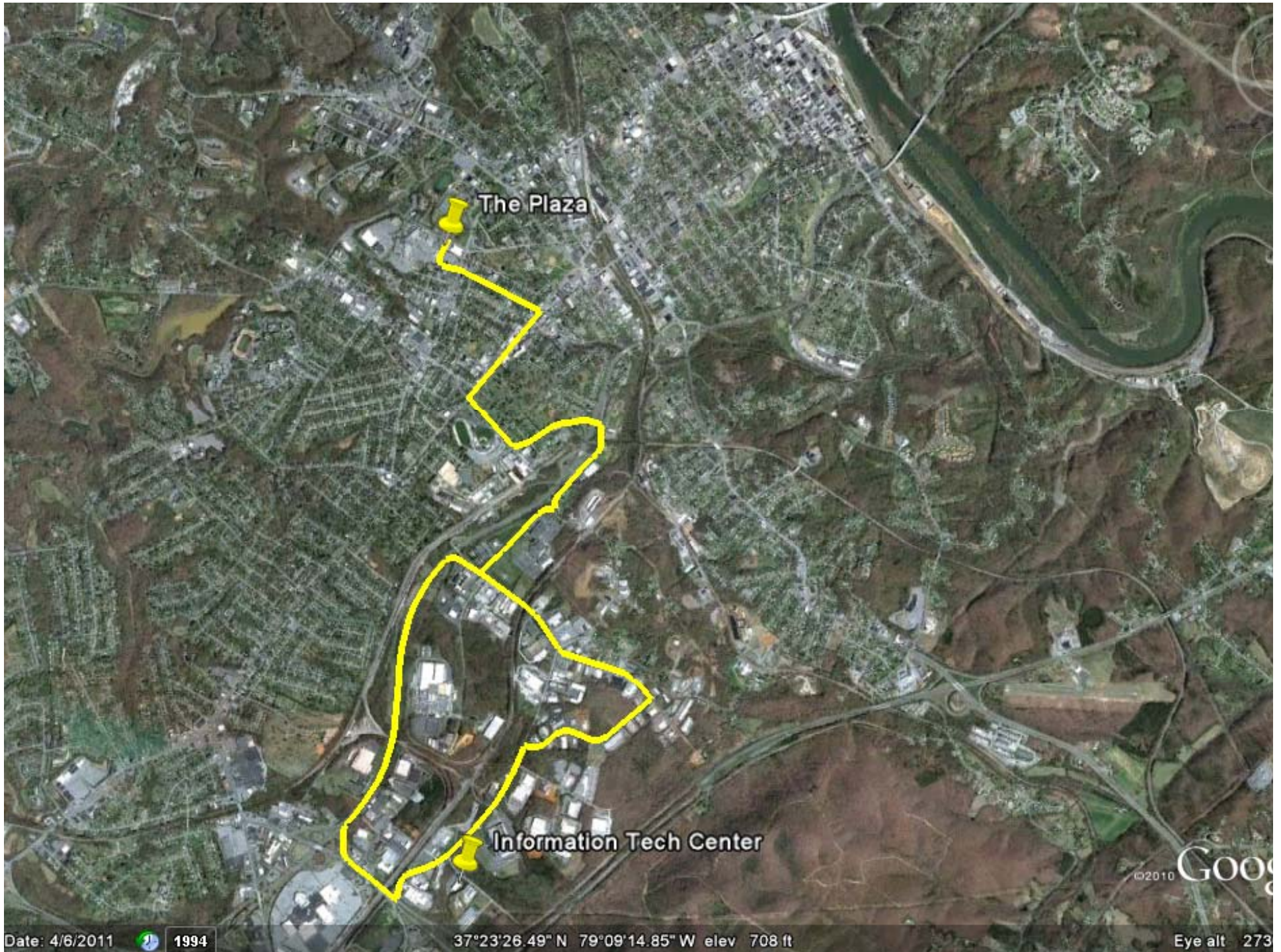
Date: 4/6/2011

1994

37°23'26.49" N 79°09'14.85" W elev 708 ft

©2010 Google

Eye alt 273



The Plaza

Information Tech Center

Date: 4/6/2011

1994

37°23'26.49" N 79°09'14.85" W elev 708 ft

©2010 Google

Eye alt 273

GLTC BUS TOUR



BUS TOUR OBSERVATIONS

- Corridors

- What is notable about the design of the roadway as we pass through different parts of the community?
- What kind of walking and biking infrastructure is present?
- How do the buildings relate to the street?
- Does the bus route represent one corridor typology or multiple?

BUS TOUR OBSERVATIONS

- Community Destinations
 - What kind of land uses or activities are located within walking distance of the Young Place and Plaza transfer center bus stops?
 - What kind of walking or biking infrastructure is present near the stop?
 - Is there bicycle parking?
 - How much parking is nearby?

BUS TOUR OBSERVATIONS

- What kind of corridor(s) is this?
 - What type of physical infrastructure improvements would you make?
 - Would you make any policy changes regarding land uses?
 - What are the potential barriers to implementation?
 - What are potential solutions to implementation?

- Next Steps
 - Detail corridor typologies
 - Development of prototypical placetypes
- Next Steering Committee Meeting
 - Tentative Dates/Location:
 - Hampton Roads Area – the week of Oct 10th or 17th
- Project website www.drpt.virginia.gov
 - Click on 'transit' and 'transit planning' and other links 'Multimodal and Public Space Design Guidelines'

www.drpt.virginia.gov/activities/MultimodalandPublicSpaceDesignGuidelines.aspx